### CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET SACRAMENTO, CA 95814-5512 www.energy.ca.gov



### NOTICE OF PROPOSED AWARD

## **Electric Program Investment Charge (EPIC) Program**

# Grant Solicitation PON-13-302 Developing Advanced Energy Storage Technology Solutions to Lower Costs and Achieve Policy Goals

## **December 10, 2014**

On April 16, 2014, the California Energy Commission (Energy Commission) released a Grant Solicitation and Application Package entitled "Developing Advanced Energy Storage Technology Solutions to Lower Costs and Achieve Policy Goals" under the Electric Program Investment Charge (EPIC) Program. The purpose of this solicitation is to fund applied research and development projects that meet the following objectives:

- 1) Optimize grid-level energy storage deployment with respect to location, size, and type; and
- 2) Develop innovative utility-scale and generation energy storage technologies and applications to mitigate intermittent renewables and meet peak demand.

Projects funded under this solicitation will help to address technical and market barriers as well as support the CPUC's procurement targets by: (1) developing computer models for the CPUC's energy storage use cases (i.e., energy storage use scenarios that take into account the location and regulatory function of the energy storage technology or system) to determine which storage technologies and systems are most optimal (modeling initiative); and (2) developing advanced energy storage technologies and systems that can be demonstrated and deployed by the investor-owned utilities (technology initiative).

The grant solicitation stated that there was a total of \$6,000,000 available for agreements resulting from this solicitation. As the Energy Commission reserves the right to increase or reduce the amount of funds available, the Energy Commission added \$1,309,284 to this solicitation for a total funding amount of \$7,309,284. Of these funds, \$1,000,000 is allocated to fund the modeling initiative of this solicitation and \$6,309,284 is allocated to fund the technical initiative of this solicitation.

The attached tables entitled "PON-13-302/S8.1: Developing Advanced Energy Storage Technology Solutions to Lower Costs and Achieve Policy Goals (modeling initiative)"

and "PON-13-302/S8.2: Developing Advanced Energy Storage Technology Solutions to Lower Costs and Achieve Policy Goals (technology initiative)" identifies the applicants who submitted an application for this solicitation, their score, and, if appropriate, their recommended level of funding. If more funds become available, the Energy Commission reserves the right to fund additional passing projects. This notice is being mailed to all parties who submitted an application for this solicitation and is also posted on the Energy Commission's website at: <a href="http://www.energy.ca.gov/contracts">http://www.energy.ca.gov/contracts</a>.

Funding of proposed projects resulting from this solicitation is contingent upon the approval of these projects at a publicly noticed Business Meeting at the Energy Commission in Sacramento, California, and execution of a grant agreement. If the Energy Commission is unable to timely negotiate and execute a funding agreement with an Applicant, the Energy Commission, at its sole discretion, reserves the right to cancel the pending award and recommend funding to the next highest ranking eligible application. Applicants will be notified of such changes in a revised notice.

Questions about this solicitation, including requests for scoring debriefs, should be

directed to: Crystal Presley-Willis, Commission Agreement Officer

California Energy Commission 1516 Ninth Street, MS-18 Sacramento, California 95814 Telephone: (916) 654-5067

E-mail: Crystal.Presley-Willis@energy.ca.gov

### PON-13-302/S8.1: Developing Advanced Energy Storage Technology Solutions to Lower Costs and Achieve Policy Goals (modeling initiative)

Available Funding: \$1,000,000 Minimum Award Amount: \$250,000 Maximum Award Amount: \$1,000,000

Applicant	Proposal #	Proposed ES Project	Requested Funding				Award Status	Proposed
			EPIC	Match	Total	<b>Total Score</b>		Award
		Validated and Transparent Energy Storage						
EPRI	32	Valuation and Optimization Tool	\$1,000,000.00	\$901,944.00	\$1,901,944.00	85.00	Awardee	\$ 1,000,000.00
		Modeling of Grid-Level Energy Storage for					Finalist - But not	
UC Davis	16	Use with Renewable Generation	\$642,908.00	\$0.00	\$642,908.00	72.40	funded	
		Optimal Investment and Operations					Finalist - But not	
UC Berkeley	25	Strategies	\$523,662.00	\$0.00	\$523,662.00	71.00	funded	
		Optimal Grid-level Energy Storage						
		Deployment in CA with Energy Storage					Finalist - But not	
UC Riverside	8	Portfolio Optimization Model	\$250,000.00	\$76,505.00	\$326,505.00	70.40	funded	
		Developing Advanced Energy Storage						
		Technology Solutions to Lower Costs and						
Integral Analytics	4	Achieve Policy Goals	\$483,100.00	\$900,000.00	\$1,383,100.00	69.40	Did not Pass	
		Energy Storage Evaluation and Optimization						
Energeia Consulting LLC	11	Model	\$299,000.00	\$0.00	\$299,000.00	64.40	Did not Pass	
		Modeling Optimized Advanced Energy						
Fortify Energy Company	15	Storage at Remote	\$256,722.00	\$40,000.00	\$296,722.00	38.20	Did not Pass	
		Optimize Grid-Level Energy Storage						
California Institute of Technology	3	Deployment	\$400,000.00	\$120,000.00	\$520,000.00	36.20	Did not Pass	
		Model Development for Optimizing Energy						
California State University, Long		Storage Systems in Behind-the Meter						
Beach Research Foundation	18	Applications	\$328,822.00				Disqualified	

### PON-13-302/S8.2: Developing Advanced Energy Storage Technology Solutions to Lower Costs and Achieve Policy Goals (technology initiative)

Available Funding: \$6,309,284 Minimum Award Amount: \$1,000,000 Maximum Award Amount: \$3,000,000

Applicant	Proposal #	Proposed ES Project	Requested Funding				Award Status	Proposed
			EPIC	Match	Total	Total Score		Award
Eos Energy Storage LLC	20	Battery ES System	\$2,156,704.00		\$3,324,311.00	92.40	Awardee	\$2,156,704.00
Congenra Solar	37	Advanced Thermal Storage	\$2,530,952.00		\$4,881,602.00	88.60	Awardee	\$2,530,952.00
UC Regents (UCLA Campus)	23	High Temperature Hybrid CAES	\$1,621,628.00		\$1,621,628.00	86.80	Awardee	\$1,621,628.00
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Eos Energy Storage, LLC	24	Distributed ES Systems	\$1,894,866.00	\$1,437,301.00	\$3,332,167.00	86.40	Funded	
			7 2,00 1,000.00	7-7 101 700-100	40,000,000		Finalist - But not	
Lightsail Energy/UC San Diego	39	Isothermal Compressed Air System	\$1,200,276.00	\$779,400.00	\$1,979,676.00	86.20	Funded	
		,	, , ,	, , , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , , ,		Finalist - But not	
Lightsail Energy/UC Irvine	38	Isothermal Compressed Air System	\$1,085,125.00	\$811,645.00	\$1,896,770.00	86.00	Funded	
					. , ,		Finalist - But not	
Amber Kinetics FuelCell Energy, Inc.	26	Fly Wheel System	\$2,000,000.00	\$12,000,000.00	\$14,000,000.00	85.80	Funded	
			+=,000,000.00	+==/==/===	7 - 1,000,000		Finalist - But not	
	27	Battery/Fuel Cell Hybrid System	\$1,199,975.00	\$1,169,580.00	\$2,369,555.00	85.80	Funded	
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	. , ,	, ,,	, ,,		Finalist - But not	
Olivine, Inc.	35	Li-ion/CAES System	\$1,499,076.00	\$1,021,972.00	\$2,521,048.00	85.00	Funded	
			<i>+</i> = <i>y</i> =	+=/==-/=-	<del>+ -,,</del>		Finalist - But not	
Utility Savings & Refund LLC	29	Vanadium Flow Battery System	\$1,875,000.00	\$1,200,000.00	\$3,075,000.00	82.20	Funded	
			<i>+</i> =/0.0/000000	+=/===/====	40,010,000		Finalist - But not	
Farasis Energy, Inc.	36	Advanced Li-ion System	\$2,921,847.00	\$731,960.00	\$3,653,807.00	82.00	Funded	
		,,,,,,	. , , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , , ,	, -,		Finalist - But not	
Electric Power Research Institute	31	Used EV Battery System	\$1,911,289.00	\$250,000.00	\$2,161,289.00	81.00	Funded	
			<del>+ -,, </del>	+===,=====	<del>+-,,</del>		Finalist - But not	
Gridtential Energy, Inc.	30	Lead Acid Battery System	\$3,000,000.00	\$1,156,073.00	\$4,156,073.00	80.60	Funded	
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Trans Power, Inc.	9	Reconfigurable Battery ES System	\$2,500,000.00	\$751,820.00	\$3,251,820.00	80.00	Funded	
		The second secon	+=,==,===	Ţ:02,020.00	40,202,020.00		Finalist - But not	
Halotechnics, Inc.	1	Modular Thermal ES System	\$2,992,595.00	\$39,380.00	\$3,031,975.00	79.60	Funded	
		, , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , , ,	, ,	, , , , , , , , , , , , , , , , , , , ,		Finalist - But not	
Green Charge Networks, LLC	14	Intelligent Energy Storage Unit	\$2,520,400.00	\$1,948,950.00	\$4,469,350.00	79.40	Funded	
		0 0, 0			. , ,		Finalist - But not	
Cumulus Energy Storage	33	Battery Specific Membranes	\$3,000,000.00	\$600,000.00	\$3,600,000.00	78.60	Funded	
		, .			. , ,		Finalist - But not	
Andromeda Power LLC	10	Plug Electric Vehicle Distributed Storage	\$1,713,437.00	\$225,691.00	\$1,939,128.00	78.40	Funded	
					. , ,		Finalist - But not	
Halotechnics, Inc. SunEdison	22	Molten salt ES System	\$3,000,000.00	\$39,380.00	\$3,039,380.00	77.80	Funded	
			, , , , , , , , , , , , , , , , , , , ,	, ,	, , , , , , , , , , , , , , , , , , , ,		Finalist - But not	
	19	Integrated Battery/PV System	\$1,876,773.00	\$574,094.00	\$2,450,867.00	76.00	Funded	
		, ,			. , ,		Finalist - But not	
LaunchPoint Technologies, Inc.	21	Gravity Power Module	\$1,522,254.00	\$0.00	\$1,522,254.00	74.00	Funded	
,							Finalist - But not	
UC Regents	7	Hydrogen Based Argon Power Cycle	\$1,565,000.00	\$0.00	\$1,565,000.00	73.40	Funded	
		, , ,			. , ,		Finalist - But not	
Helix Power Corp.	5	High Power Flywheel	\$1,999,561.00	\$0.00	\$1,999,561.00	72.60	Funded	
Firm Clean Energy LLC	6	Combined RE and Battery ES System	\$2,665,376.00		\$2,665,376.00	69.60	Did Not Pass	
Hysteresis, Inc.	12	Steam & Thermal ES System	\$1,317,340.00	· · · · · ·	\$1,317,340.00	69.00	Did Not Pass	
Radback Energy Inc.	17	Liquid Air ES System	\$900,500.00		\$900,500.00	68.60	Did Not Pass	
Electricore, Inc.	28	Smart Compressed Air ES System	\$2,490,880.00		\$2,490,880.00	65.80	Did Not Pass	
Licetificate, mc.		A new Organic Redox Flow Battery for Grid	+=,:==,=30:00	Ţ0.00	, _, :::,::0:00			
Cleantech Institute, Inc.	34	Scale Energy Storage Application	\$2,216,842.00				Disqualified	